

WHAT IS CLAIMED IS:

1. Muscle fatigue measuring equipment comprising:  
myoelectric change acquiring means,  
5 extracellular fluid change acquiring means, and  
muscle fatigue status determining means,  
wherein the myoelectric change acquiring means acquires a  
myoelectric change of a living body,  
the extracellular fluid change acquiring means acquires a  
10 change in extracellular fluid of the living body, and  
the muscle fatigue status determining means determines a muscle  
fatigue status from the myoelectric change acquired in the  
myoelectric change acquiring means and the change in  
extracellular fluid acquired in the extracellular fluid change  
15 acquiring means in accordance with criteria for determining a  
muscle fatigue status based on a myoelectric change and a change  
in extracellular fluid.

2. The equipment of claim 1, wherein the myoelectric  
20 change acquiring means comprises:  
myoelectric potential measuring means,  
first storage means, and  
myoelectric change computing means,  
the myoelectric potential measuring means measures a  
25 myoelectric potential occurring along with the movement of a  
muscle of a living body so as to determine a myoelectric value,  
the first storage means stores an arithmetic expression for  
determining a myoelectric change and a myoelectric value at a

base time, and  
the myoelectric change computing means computes a myoelectric  
change by substituting the myoelectric value determined by the  
myoelectric potential measuring means and the myoelectric value  
5 stored in the first storage means into the arithmetic expression  
stored in the first storage means, and  
the extracellular fluid change acquiring means comprises:  
biological impedance measuring means,  
second storage means, and  
10 extracellular fluid change computing means,  
the biological impedance measuring means provides an  
alternating current to a living body and measures a voltage  
caused by a biological impedance so as to determine an  
extracellular fluid,  
15 the second storage means stores an arithmetic expression for  
determining a change in extracellular fluid and an  
extracellular fluid at a base time, and  
the extracellular fluid change computing means computes a  
change in extracellular fluid by substituting the extracellular  
20 fluid determined by the biological impedance measuring means  
and the extracellular fluid stored in the second storage means  
into the arithmetic expression stored in the second storage  
means.

25       3. The equipment of claim 2, which has measuring  
electrodes serving both as communication ports to detect the  
myoelectric potential in the myoelectric potential measuring  
means and as communication ports to detect the voltage caused

by the biological impedance in the biological impedance  
measuring means and which also has a switching device that  
switches a signal of the myoelectric potential from the  
measuring electrodes and a signal of the voltage caused by the  
5 biological impedance from one to another.

4. The equipment of claim 1, wherein the muscle fatigue  
status determining means determines a muscle fatigue status by  
a series of procedural steps, i.e., comparing a myoelectric  
10 change acquired by the myoelectric change acquiring means with  
a reference value for determining whether the myoelectric  
change is a myoelectric change at a normal time or not so as  
to determine the presence or absence of muscle fatigue as the  
muscle fatigue status, comparing a change in extracellular  
15 fluid acquired by the extracellular fluid change acquiring  
means with a reference value for determining whether the change  
in extracellular fluid is a change in extracellular fluid at  
a normal time or not so as to determine the equilibrium state  
of the muscle fatigue as the muscle fatigue status, and  
20 comparing the change in extracellular fluid acquired by the  
extracellular fluid change acquiring means with a reference  
value for determining whether the change in extracellular fluid  
is larger or smaller than the change in extracellular fluid  
acquired last time so as to determine the progress of the muscle  
25 fatigue as the muscle fatigue status.

5. The equipment of claim 2, wherein the muscle fatigue  
status determining means determines a muscle fatigue status by

a series of procedural steps, i.e., comparing a myoelectric change acquired by the myoelectric change acquiring means with a reference value for determining whether the myoelectric change is a myoelectric change at a normal time or not so as to determine the presence or absence of muscle fatigue as the muscle fatigue status, comparing a change in extracellular fluid acquired by the extracellular fluid change acquiring means with a reference value for determining whether the change in extracellular fluid is a change in extracellular fluid at a normal time or not so as to determine the equilibrium state of the muscle fatigue as the muscle fatigue status, and comparing the change in extracellular fluid acquired by the extracellular fluid change acquiring means with a reference value for determining whether the change in extracellular fluid is larger or smaller than the change in extracellular fluid acquired last time so as to determine the progress of the muscle fatigue as the muscle fatigue status.

6. The equipment of claim 3, wherein the muscle fatigue status determining means determines a muscle fatigue status by a series of procedural steps, i.e., comparing a myoelectric change acquired by the myoelectric change acquiring means with a reference value for determining whether the myoelectric change is a myoelectric change at a normal time or not so as to determine the presence or absence of muscle fatigue as the muscle fatigue status, comparing a change in extracellular fluid acquired by the extracellular fluid change acquiring means with a reference value for determining whether the change

in extracellular fluid is a change in extracellular fluid at a normal time or not so as to determine the equilibrium state of the muscle fatigue as the muscle fatigue status, and comparing the change in extracellular fluid acquired by the  
5 extracellular fluid change acquiring means with a reference value for determining whether the change in extracellular fluid is larger or smaller than the change in extracellular fluid acquired last time so as to determine the progress of the muscle fatigue as the muscle fatigue status.

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7. The equipment of claim 1, wherein the extracellular fluid is the ratio of an extracellular fluid to intracellular and extracellular fluids.

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8. The equipment of claim 2, wherein the extracellular fluid is the ratio of an extracellular fluid to intracellular and extracellular fluids.

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9. The equipment of claim 3, wherein the extracellular fluid is the ratio of an extracellular fluid to intracellular and extracellular fluids.

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10. The equipment of claim 4, wherein the extracellular fluid is the ratio of an extracellular fluid to intracellular and extracellular fluids.

11. The equipment of claim 5, wherein the extracellular fluid is the ratio of an extracellular fluid to intracellular

and extracellular fluids.

12. The equipment of claim 6, wherein the extracellular  
fluid is the ratio of an extracellular fluid to intracellular  
5 and extracellular fluids.

13. The equipment of claim 1, wherein the extracellular  
fluid is an interstitial fluid.

10 14. The equipment of claim 2, wherein the extracellular  
fluid is an interstitial fluid.

15 15. The equipment of claim 3, wherein the extracellular  
fluid is an interstitial fluid.

16. The equipment of claim 4, wherein the extracellular  
fluid is an interstitial fluid.

20 17. The equipment of claim 5, wherein the extracellular  
fluid is an interstitial fluid.

18. The equipment of claim 6, wherein the extracellular  
fluid is an interstitial fluid.